

A NEW DEEP-SEA THERMOGRAPH—MOLTSCHANOFF 551.46.087(048) SYSTEM

Annalen der Hydrographie und Maritimen Meteorologie of August 15, 1926, contains a description and diagram of this instrument. A fundamental difficulty with former types of deep-sea thermograph has been the impossibility of keeping sea water out of the housing of the registering apparatus. The trouble lay with the connections between the thermal element outside of the housing and the register inside. Any connecting rod had to pass through a stuffing box. And no thermal element was powerful enough to work a rod through a stuffing box tight enough to keep out water under deep sea pressures. The new device is intended to remedy all this.

Its thermal element is a brass tube of small diameter, sealed water-tight at both ends, mounted outside of and parallel to the heavy cylindrical register housing, to which it is attached at the middle of both tube and housing by a short, water-tight hollow fixture giving free access from the interior of one to the interior of the other. Within the tube are two light invar-steel bars. These extend, respectively, from fastenings near the ends of the tube to a movable joint opposite the opening in the hollow fixture just referred to. From this joint a rod passes through the fixture to a train of levers leading to the pen on the registering drum.

The ingenious new feature in Moltschanoff's device lies in using the expansions and contractions of the brass tube with its high coefficient of expansion, to move the invar-steel bars which have a coefficient very close to zero.

The depth of submergence of the instrument is obtained by utilizing the hydrostatic pressure in a bourdon tube mounted with open end through the main register housing, the inner end being connected with a lever train to a pen on the recording drum.—B. M. V.

EARLY METEOROLOGY IN GERMANY

G. Hellmann, continuing his research into the beginnings of meteorological observation in Germany, has been able to set back the date of the supposed earliest records (Stoffler's *Almanach nova*, 1499) to *Ephemerides* by one Regiomontanus from 1490. This work contains for each month for the years 1490–1505 two pages of weather notes entirely in Latin except for two entries of "hagel" and one, for January 20, 1501, of "eyn grosz waszr"—a similar occurrence in February, 1491, having been noted as a "diluvium." The above are items from the section on "Pre-instrumental Meteorological Observations" in a fascinating historical survey by Hellmann entitled "The Development of Meteorological Observations in Germany from their Beginnings to the Establishment of the National Observing System" (issued by the Academy of Sciences, Berlin, 1926).

With encyclopedic thoroughness the author has assembled and briefly characterized all the known sources of observational material. The noninstrumental period extends from 1490 to 1678. The first decade which the author describes as having "active meteorological stations" was that of 1701–1710. There were six stations in that decade. Through various periods of increase and decrease the number rose to 67 for the decade 1781–1790, but fell off to 20 for 1801–1810. Thereafter, however, the growth of stations was continuous, and in the decade 1841–1850 there were 169.

October, 1847, saw the establishment of the national service, the Prussian Meteorological Institute.—B. M. V.

PROGRESS IN INTERNATIONAL METEOROLOGY

The most recent meeting of the International Meteorological Committee was held in Vienna, September 23–28, 1926. To this meeting, eight of the commissions appointed by the committee presented some 70 resolutions looking toward further cooperation between the nations in meteorology, the commissions having been in session from September 13 to 20, in Zurich.

Progress is indicated in the adoption of an international code for day and night visual gale warning signals; in the definitive fixing of wind velocity equivalents to be used in translating anemometer velocities into Beaufort velocities for weather telegrams; in the preparation of an international cloud atlas embodying changes in cloud nomenclature and a new set of photographs. This will be submitted for the approval of the International Conference of Directors in 1929, and will take the place of the 1895 atlas of Hildebrandsson, Riggenbach, and Teisserenc de Bort.

The work of the International Meteorological Committee has outgrown the stage in which the labor of its secretarial and publishing work could legitimately be imposed on some one of the national meteorological services. A committee of three has therefore been put to work upon the problem of setting up a permanent secretariat. This secretariat will take over the records of the conference and of the international committee and its commissions, will arrange the meetings, see to all publication, and act as a clearing house for meteorological information of interest to the State services concerned.—B. M. V.

551.578.1 : 551.510.4 (048) MORE "BLOOD RAIN"

La Nature for November 27, 1926, prefaces an account of a "blood rain" in France on October 30, 1926, with a brief historical résumé. We quote the following from this account:

It was not until 1669, on the 17th of March, when a "blood rain" fell at Chatillon-sur-Seine, that the truth began to be suspected. "There fell in various parts of the city," says the History of the Academy of Sciences, "a sort of rain, or reddish liquid, thick, viscous, and stinking, which resembled a rain of blood. The prints of great drops of it were observed on walls; it was this fact which led to the belief that this rain was made of stagnant, muddy water, raised by a whirlwind from some pond in the neighborhood." * * *

There have been observed many red and yellow rains, especially in southern France, southern Italy, the Balkans, and Turkey. * * * The Saharan simoom, and the sirrocco, are quite capable of raising tons of these particles. On the Canary Islands, the soil of which is essentially volcanic, there are observed sand dunes formed of deposits which east winds have brought from the African deserts. In 1846 a mud rain accompanying a series of thunderstorms and violent squalls fell over France, Italy, and in Turkey. It covered the Jura and the south of France with a thick deposit. In Valence the layer was so thick that people had to clean their roof gutters and disconnect the down-spouts. The Chateau of Chamagneu received a coating that rendered it almost unrecognizable. We find similar rains in 1847 at Chambéry, and in 1862 in central France, in 1863 a snow which was thought to be colored with blood, as also on March 10, 1869, February 13, 1870, etc. * * *

Of the same sort was the rain which fell on the 30th of October last, about 6.30 p. m. On the following morning the inhabitants of Isle-sur-Serein were astonished to find that the rain storm which had been raging all night had left an earthy deposit, reddish in color and oily to the touch. In the troughs for catching water from the roofs the water was muddy and rust-colored; clothes left out by washerwomen were stained a muddy russet and had to be put back in the wash. * * * The deposit was somewhat like powdered cacao. Under the microscope it showed that it was composed of tiny semitransparent crystals and of a rather glistening dust in a clayey matrix. * * *